

[P] *With the Author's respects*

OBSERVATIONS

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ON

CIVIC MALARIA

AND THE

HEALTH OF TOWNS:

CONTAINED IN

A POPULAR LECTURE

DELIVERED AT THE

ROYAL INSTITUTION OF SOUTH WALES,

IN THE YEAR 1847.

BY

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“The laws of religion, founded on principles of the most active benevolence, the feelings of humanity, and the common interests of society, will not suffer us to be indolent spectators of the distresses of our fellow-creatures, from whatever cause they may arise.”—DR. DENMAN.

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P R E F A C E .

It is not pretended that the following pages contain any novelty or discovery ; the tract constitutes merely an essay on a subject of interest and importance which is most properly occupying the public mind and the attention of the Legislature.

The Author thankfully acknowledges the advantages he has derived from perusing the writings of various authors, from whose stores of facts and information he has largely drawn in the accompanying publication.

“ My own opinion is, that fever is a contagious disease, spreading from person to person, just as scarlet-fever or small-pox does, and like those diseases, haunting over-crowded or ill-drained districts, and all places where, from any cause whatever, the air is foul or filled with animal and vegetable emanations. It loves the banks of rivers, the borders of marshes, the edges of stagnant pools ; it makes itself a hole in the neighbourhood of cess-pools and badly-constructed drains, and takes especial delight in the incense of gully-holes. It has a perfect horror of fresh air, soap, and whitewash ; but when left to itself it will linger for years amidst scenes of filth and corruption, and hold in its deadly embrace all human beings who have the same depraved taste, or are so unfortunate as to be thrown into its company. It is the favourite child of ‘ laissez faire,’—in plain language, ‘ let alone ;’ and bears the same relation to filth that crime bears to ignorance.”—
DR. GUY.

OBSERVATIONS,

&c.

The subject of the following pages is that of “Civic Malaria and the Health of Towns.”

“Civic Malaria” is a term frequently applied, of late, to that kind of Malaria—or, as the term derived from the Italian language significantly implies, “bad air”—which, in various forms, germinates from the connexion of animal and vegetable matter, in combination with moisture and heat, and disperses through the atmosphere in which people live and breathe in towns and cities; and hence “Civic Malaria.”

It will naturally occur to the inquiring mind, that we should, in treating of this subject, go back to first principles, and show, as far as we can, what constitutes *Malaria*, in any form; what are the characters of this deleterious compound; where it is generated, and how discovered; what are its general effects; and, where known to exist, what the remedies are for such an evil.

I shall, as far as I can, endeavour to place a brief general sketch or outline of the information possessed on these topics before you, with a view to engage your attention, particularly in that important portion of the subject which is at present, as you well know, occupying the attention of the Legislature and the country at large; namely, the “Health of Towns.”

Malaria, or bad air, is generated and discovered by its effects in almost every part of the known world; but in some it is very destructive to health and life, and causes fatal and dangerous diseases,—these diseases, many of them, not only fatal in themselves, but, when once generated, apt to spread by contagion and infection.

Miasma, from the Greek; meaning to contaminate or pollute, is another term applied to this ærial poison; and to this term, the word marsh, or palludial, is frequently added, to signify that species of

bad air, which emanates from swamps and marshes; i.e., Marsh Miasma or Malaria.

I believe, in dealing with the characters of Malaria, I must be content rather to state facts than to offer explanations or conclusive theories, as to what the specific properties of this deleterious agent essentially are; indeed, there are perhaps few subjects, which, up to the present time, more clearly demonstrate how much information mankind have yet to acquire, than is shewn in contemplating the little they possess on this interesting and important subject.

We infer the existence and presence of Miasma, or Malaria, exactly as we do that of any other cause or source of contagion, (of which we have no direct evidence presented to us in our possessing some given material or plainly evident ingredient by which we can effect inoculation,)—namely, by the *effects* produced on the animal economy, which the experience of mankind generally, and our own, assures us, occur under certain circumstances, at certain times, or in particular places.

Thus we trace the origin of *Marsh Miasma*, to particular localities, from its having been known and observed that such effects are, for the most part, produced only in the vicinity of marshes, or where vegetation comes in contact with water, in such a manner that chemical actions and changes may take place between them. The observation of mankind again has clearly ascertained certain peculiar effects to be caused by this species of Miasma, or Malaria, and hence we reason when such phenomena occur, that such source or cause is present; and accordingly, when particular forms of fever show themselves, especially the more familiar kinds, such as remittent or intermittent fever, we infer the existence of Miasma in the vicinity, and endeavour to discover its sources, although they may not at first be very apparent.

It is chiefly from well ascertained facts, such as I have alluded to, that we are cognisant of Malaria; for in truth, of the physical and chemical *properties* of Miasma and Malaria, we know nothing.

Scientific attempts made to discover the precise nature, or evince the presence of Miasma, have not succeeded satisfactorily in their results; for no appreciable difference has been detected between the atmospheric air of the most deadly localities infested with Miasma, and those of well-ascertained salubrious situations; and therefore, as

on the subject of Malaria we possess *no* satisfactory information as regards its precise nature, or even its presence, excepting by its effects, we are only able to reason on the laws of its propagation, and to investigate the extrinsic circumstances that modify its influence, i.e., the *effects produced* on the animal economy, and the measures to be adopted to guard against *those effects*.

Again, it must be, however, observed, because it will bear on the more immediately important object and portion of my lecture, that although it has been clearly ascertained that marshes, whether salt or fresh, are prolific sources of Malaria,—especially in certain stages of the drying process under a hot sun,—this poison is also equally produced in many and various sorts of soils, to which the name of “marsh” certainly does not apply. For instance, in the warmer latitudes of the earth, those accumulations of brushwood, reed, and grass, called “jungles,” are so familiarly known to be productive of Malaria, that “jungle fever” is an equally common name for Malarious diseases in those parts of the world, as is “marsh fever” in Europe.

Again, in the warmer parts of Asia, Africa, and America, even the larger and more open woods are known to generate this poison under certain circumstances.

Grounds which are alternately inundated and drained, as for the cultivation of rice, are also well known to produce Malaria. *Wet meadow* lands in hot climates, and the same localities in temperate ones, in seasons of extreme heat, will generate Miasma; at least, agues are known to prevail where and when no other assignable cause, excepting lands of this description, can be discovered.

That the half wet ditches of fortifications will also, undoubtedly, sometimes give rise to Miasmatic fevers, is unquestionable; and where ditches of this kind, as those of “Bourg en Bresse,” have been filled up, these diseases have ceased; although, on this occasion, previously to the filling up of those ditches, fevers had raged so violently, that usually about one-half of the inhabitants in the vicinity of the fortifications were incapacitated from following their occupations for about one-third of the year.

The mud which is left by the drying of extensive ponds or marsh-pools by the sun, although no great quantity of actual growing vegetation may be present, but containing *vegetable*, and probably also *animal* recrements, is capable also of furnishing this poison.

Lakes, especially those of flat countries, also produce these poisonous emanations ; and hence the familiar term, "lake fevers." It would seem that these emanations were not only so produced by the immediate moisture rising from the margins of these reservoirs, but that they imparted, in a degree, the same quality to the adjacent country. Considerable tracts of ground in France and Hungary, and also in North America, and other parts of the world, are from this cause rendered insalubrious. The "deltas" of large rivers are frequently unhealthy, from the like causes.

The *mud* left by the retiring tides in seaports and estuaries, is productive of Miasma in hot climates ; as we know from the fact of boats' crews, when exposed to such influence, being attacked ; and we have some reason to believe that similar situations are not always healthy in a temperate climate.

The felling of extensive woods, where the land beneath the foliage has been hidden from the sun's rays, and has consequently been damp, will prove, sometimes, a cause of Miasma ; infesting the district where such woods were being cut down.

The turning up of lands which had long been in pasture, has in hot climates been known to produce Malarious fevers of a most deadly kind. And many other instances might be added.

I have briefly endeavoured, in this part of my lecture, to give you some general information relative to the effects of Malarious products, and have chosen some of the most familiar facts, because this will materially assist me in making plain and obvious the remarks I shall have to make in what I now propose to offer for your consideration.

It has already been stated that Malaria, or bad air, productive of evil effects on the health of the adjacent country, or particular seat of its source, has been ascertained to exist, not only in marshy lands, but in other situations also, where equally indisputable evidence of such emanations presented itself.

I think it would naturally occur to any inquiring mind, to suggest somewhat as follows :—If it is true that remittent and intermittent fevers, in their various forms and combinations, take their source from causes such as have been already detailed, namely, the Malaria of marshes and other localities, may not other kinds of Malaria exist in other situations, differing so far from what is called Marsh Miasma, or Malaria, that they produce, not the same, but *other* deadly diseases

and fevers, differing in character from Miasmatic diseases, but still equally, or perhaps more dangerous and destructive in their nature and effects?

The answer to this inquiry is, most undoubtedly, in the affirmative; and it is with reference to this particular part of the subject that I shall now address my audience.

I shall adduce some particular facts in history, which will go to prove this assertion generally.

I have already stated that Marsh Miasma did not only occur in palludial situations, but that it also was found in woods, jungles, and newly turned-up land, &c.; and we shall perceive that deadly fevers occur from other kinds of Malaria than that of marshes; and that these sorts of bad air may be generated in various ways.

The celebrated Dr. Rush and others mention examples of fever originating from the decomposition of coffee, potatoes, and other vegetables.

The sickliness of ships from the leakage of sugar in a damp hold is a well-known fact.

The deadly fever mentioned by Dr. Burnet to have occurred on board the *Priamus* frigate, from the action of bilge water on chips and shavings left after repairing the magazine, is another well-authenticated instance. The *Childers* brig of war had a similar fever raging in 1816. The well-known circumstance of fevers also assailing persons exposed to the emanations of burial grounds,* or the immediate receptacles of the dead, and many other instances, might be mentioned.

But perhaps as striking a fact as can well be adduced of the deadly effects of Malarious exhalations, will be found in what is called the black fever of Oxford, which happened at an Assize, in 1547; these Assizes were held in the castle of Oxford, and there seems to be no doubt but that this mortal disease, which was so fatal as to kill the judges, gentry, and most of the people present, to the number of about 300, was caused by Malarious influence, the result of a nastily kept and close gaol. Lord Verulam, who lived at this time, has in his "*Sylva Sylvarum*," published in 1620, alluded to the circumstance, and affirms this fever to have been so caused; and Dr. Mead, who, in the year

* The shocking custom of depositing human remains in the frequently overcrowded churchyards of towns is a deplorable evil, replete with danger and catastrophe. Few people have well considered the obvious mischief resulting from opening and turning up ground of this description.

1720, (at the request of Sir Richard Craggs, then one of the principal Secretaries of State,) wrote a short treatise on the prevention and management of the plague, affirms a similar opinion to that of Lord Verulam, as the result of his inquiries with respect to the cause of the black fever to which I have just alluded.

It would seem from Dr. Mead's account, that some thought this fever was produced by emanations from the earth ; and it is very possible the floors of the gaol may have been kept in that particularly neglected and filthy state which was eminently favourable to the formation of these deadly emanations.

The sentence in which Lord Bacon speaks of these fevers of the gaol, is a brief one, but it is very remarkable. He says,—

“ The most pernicious infection, next to the plague, is the smell of the jayl, when prisoners have been long and close, and nastily kept, whereof we have had in our times experience twice or thrice ; when both the judges that sat upon the jayl, and numbers of those that attended the business, or were present, sickened upon it and died. Therefore it were good wisdom that in such cases the jayl were well aired before they were brought forth.”

There would appear to be some causes of infection which may be called true or essential contagions, and “ which under a gaseous or ærial form, act of themselves, and independent of, and unaided by the circumstances of climate, atmosphere, locality, quantity, and accumulation ; these, however, do not amount to more than five or six in number, and may all be comprehended under that class, of which it is the distinguishing characteristic that they only occur once, generally speaking, in the lifetime of an individual.”* Of course, I except those which can be only communicated by inoculation. It must be remembered too, that, in many instances, contagion must not be imagined to be confined to such a limited range, for the whole fever class, under whatever shape these diseases present themselves, including even the erysipelas and ophthalmia, may be made or converted into infectious diseases, but still, an infection of locality alone ; and this well-known and well-marked local atmosphere of contagion, is principally induced by neglect, by dirt, over-crowding of patients or population, and bad ventilation, in other words, from an undue accumulation of human exhalations, and defective medical police ; and as we should

* Dr. Fergusson.

naturally expect, when this atmosphere of contagion is present, it is found that the resident population, who may be labouring at the same time under the disadvantages of being exposed to the vicissitudes of want, bad clothing, or bad food, cold and damp, and especially when these miseries are added to by another frequent accompaniment, namely, depression of spirits and loss of moral courage, become the more obnoxious to catching the prevailing disease, and then become the victims of infection;* although the strongest and most robust are by no means exempt from danger, for it will be evident that this contagious essence may exist in different degrees of intensity; and however induced, may possess the power, under favourable circumstances, of acting with accumulated force and effect; for we see that in the black fever of Oxford, the greater number of persons present, many of them, no doubt, hale, strong, happy, and well off in health, position, and worldly comfort, were assailed indiscriminately with the disease, from having been exposed to its infectious influence only for a brief space of time.

In these our islands, and the same parallels of latitude on the Continent of Europe, either typhus, or diseases of that class and tendency, are very prevalent; so much so, as to be considered almost endemial amongst the inhabitants of that portion of the globe. There appears to be something very favourable in the soil and climate to its production; particularly during certain seasons, or under certain circumstances—as damp, cold weather, and the fact of people being exposed to cold, hunger, sorrow, or other depressing causes.

No doubt, too, it may be readily generated by bad medical police, and the accumulated human effluvia I have just adverted to, as in prisons, hospitals, ships, or houses; and this in a very virulent, aggravated, and dangerous form.

I do not know any writer who has treated this subject in a more masterly manner, or in a way that proves more fully the importance and value of careful observation, and ample opportunity, as giving effect to sound reasoning and matured judgment, than has the late Dr. Wm. Fergusson, formerly Inspector-General of Military Hospitals; indeed, the whole of the observations published by this truly

* “Disease occurs when the sum of vital force which tends to neutralise all causes of disturbance (in other words, when the resistance offered by the vital force) is weaker than the acting cause of disturbance.”—LIEBIG.

estimable man and able physician, eminently deserve attention on the part of those who are interested in writings having for their object the practical utility of the medical profession. The late Dr. James Johnson too, has written wisely and well on this subject; but as this is not an address to the medical profession, I may not, perhaps, with propriety, dwell on the various writers who have so ably treated this subject, and communicated the observations made by them in various parts of the world; but I must observe that the efficient and indefatigable medical officers of the public service, both by sea and land, have as much distinguished themselves in this department of medical science, as they have done themselves honour, and brought credit to the service and their profession in every excellent and useful branch of medical and surgical science.

With reference to the particular circumstances highly favourable to the generation of contagious fevers, I shall ask your indulgence in allowing me to quote a short passage of Dr. Guy, one of the physicians to King's College Hospital,—a deservedly esteemed and able physician and writer. The passage runs as follows:—"Deficient drainage, if not the parent, is certainly the nurse of fever. My own opinion is, that fever is a contagious disease, spreading from person to person, just as scarlet fever or small-pox does, and like those diseases, haunting over-crowded or ill-drained districts, and all places where, from any cause whatever, the air is foul or filled with animal and vegetable emanations. It loves the banks of rivers, the borders of marshes, the edges of stagnant pools; it makes itself a home in the neighbourhood of cess-pools and badly-constructed drains, and takes especial delight in the incense of gully-holes. It has a perfect horror of fresh air, soap, and whitewash; but when left to itself it will linger for years amidst scenes of filth and corruption, and hold in its deadly embrace all human beings who have the same depraved taste, or are so unfortunate as to be thrown into its company. It is the favourite child of '*laissez faire*,'—in plain language, 'let alone;' and bears the same relation to filth that crime does to ignorance."

It is, I think, impossible to tell a long tale in a few words, or with better effect than this able author and lecturer has done, in the few but admirably constructed lines I have just quoted.

The able Reports of Mr. Chadwick, who has done much, and

perhaps almost more than any one man living, to elucidate to the public generally this subject, and put reformation on its proper footing;—the various communications to the Health of Towns' Commission, together with the Reports of the Commissioners engaged in this important investigation, are also of great value. The writings of Dr. Sutherland, of Liverpool, and the various communications made to the Health of Towns' Association established in that populous place, where it was much needed;—though, comparing small things with great, not more required than at Swansea, where it seems to me it is imperatively necessary such an association should exist, and where the advantages would be felt, in its effective working, by every man, woman, and child it contains. I say all these testimonies to which I have adverted, combine with and support each other in furnishing a commentary on the text I have just read you from one of Dr. Guy's lectures, and are well worth the consideration of all persons who really wish well to the health of themselves and their neighbours.

The experience of our own times, and the history of those past, make known the ravages of typhoid fevers, and depict them in social life as depopulating districts and devastating towns, sweeping off the inhabitants wholesale.

Armies, too, carrying on warlike operations, have been so visited, and almost annihilated; and we shall not be surprised that, in more ignorant times, some of these visitations were attributed, not to the right causes, but set down to incantations and sorceries, or other fallacious superstitions; frequently, also, to the poisoning of the wells and food by hostile foes on the one hand, or invaded inhabitants on the other;—whereas the true source and causes were of a very different character.

I might readily, did it seem requisite, adduce further information on this topic, in order to point out the evil; and I might afterwards as readily adduce indisputable proofs, *ad infinitum*, to convince you that the whole, or at least the greater part of those evils, were remediable; and equally irresistible proof might be also adduced to show that the remedies were plain, obvious, and accessible; but to go into this fully would take far more of your time than it is my intention to occupy on this occasion,—even were I to confine my attention to some few of the more generally appropriate remedies

applicable to ameliorating the health of towns, by abrogating the causes that give rise to such malaria.

If I were, for instance, to demonstrate the advantages and necessity that the whole refuse of a town should be removed as soon as it is produced—that all town manure should be public property, and that in so removing it, and in so husbanding this valuable commodity, it would produce enormous revenue in money to the inhabitants, and immense advantages to the landowners adjacent—paying the collectors and distributors handsomely, often largely, for their labour and capital,—whereas it is now worse than useless—wasted, and instead of being converted into a source of revenue, is allowed (for such is the fact) to remain a scourge and a deadly pest, destroying in this kingdom annually, as ascertained by accurate computation, more human beings than two or three of the most fatal general engagements of the last war with France put together. What a frightful contemplation!—what a mass of human woe and misery! Yet it is nevertheless truthful.

The consideration of further points, such as the removal of house soil,—the removal of ashes and solid refuse from houses,—the cleansing of courts and streets,—the various modes by which this should be effected,—the danger and disadvantages of the want of, or of insufficient pavement, — defective ventilation, and all those influences which affect the purity of the atmosphere in dwelling-houses, workshops, &c., with many other equally important topics, would occupy several lectures, in order to reason on, elucidate, and detail them,—yet this would be a most proper subject for the labours and attention of a Health of Towns' Association, so much needed, with a view to consider and report on this subject, in order to strengthen and support the legislative Government, who have properly and justly taken this subject into consideration, in order to frame parliamentary enactments.

Such an association would also be useful in keeping the subject before the attention of the inhabitants, who are to benefit by these laws, and who no doubt will be called on to find the necessary funds to carry out the needed improvements, by which the poor-rates will be diminished, the poor rendered more healthful and happy and prosperous, and the public receive immunity from the scourge of contagious sickness, at present so rife.

It is not too much to say that this immunity would necessarily follow effectual measures and adequate exertions. Let us see how far this may be probable.

Formerly, the metropolis, and other parts of this country, were afflicted with a scourge which happily now is comparatively unknown, namely, the Scurvy. This arose from not having any sufficient food during the winter months for fattening cattle; they were necessarily killed, for the most part, before that season of the year, and salted,—and this excess of salted diet, and the ill-ventilated houses and dirty habits of the citizens of that period, materially increased this, a then very fatal scourge. The scarcity of vegetables, too, materially added to illness of many kinds,—gardening, on an effective scale, being comparatively a recent introduction.

Thus the sea scurvy and land scurvy, analogous diseases, were then, from similar causes, constantly making fearful ravages on the ocean and on land.

You may have heard, also, that during the early part of the present year, scurvy attacked the working population of many districts, and amongst others this district, from bad and insufficient food, particularly vegetable diet; and although I have seen some dreadfully severe cases of sea-scurvy brought into this port occasionally, I must say I never saw worse than some of those brought to my notice which occurred on land during the period I have mentioned.

I advert to this disease more particularly, because it is familiarly known, together with its causes, and because it is also well ascertained that it may be prevented effectually, as may be seen from the fact, that it is in the present day, from good regulations, scarcely ever seen in the British navy, however long the voyages taken; whereas formerly the very reverse was the case—it constantly assailed and sometimes depopulated whole fleets.

On land, it is related by Dr. Lind, that at the siege of Thorn about 6000 of the garrison died of this disease. This arose from the soldiers being pent up within the walls, and being exposed to cold and damp, and having insufficient vegetables and other food, added to, no doubt, by despondency and anxiety.

At sea, even so late as 1741, half the crew of the fleet of Capt. Anson, afterwards Lord Anson, died of this disease in less than six

months after leaving England. In 1726, when Admiral Hosier sailed to the West Indies with seven ships, he buried his ship's companies twice, and then died himself of a broken heart.

In mentioning these facts, I may say that the vast difference between the state of the royal navy in 1847 and 1726 and 1741, as regards scurvy, is peculiarly striking; and I wish to observe, that with regard to many diseases now fearfully infesting large towns and whole districts, there is little doubt but that an almost equally miraculous change would soon occur, if energetic and persevering means were used, and the state of things calculated to effect this object adequately carried out; in other words, if for a system, such as at present is commonly observed in the arrangement of houses, streets, rooms, cleanliness, &c., all, generally speaking, as bad as well can be, were substituted rational and obviously effective arrangements. I do not despair of seeing much done in this way.

The Plague is another disease which you are aware formerly ravaged the Metropolis of England on several occasions; the most remarkable instances were those of 1592, 1603, 1625, 1630, 1636, and 1665; on which last occasion London was nearly burned down; since when a similar visitation has not assailed it. No doubt is entertained but that the fearful ravages of this disease were much added to by the state of the buildings, crowded streets, close houses, and other obviously removeable causes; for, as we see, in 1665 a very effective remedy was providentially applied. I say providentially, because if we look to Dr. Quincey's account, published in 1721, we shall find that in 1542, 11,053 died; in 1603, 30,566; in 1625, 35,403; in 1630, 1,317; in 1636, 10,400; in 1664-5, the accounts, probably from the great confusion which prevailed, are not accurate, but I find it is computed at about 68,596, by the same author.

I think as fair a picture of a scene of the Plague as can well be drawn, is from that of Marseilles in 1720, in a brief extract from a letter from a physician resident then in the afflicted city, addressed to a gentleman named Wheake. (The letter is dated September 15, 1720.) The writer says he "arrived at Marseilles on the 8th, which day was a very dismal spectacle to me." Speaking of a place called the "cours," he observes:—"All that great place was filled with the dead, sick, and dying persons. The town was without bread, wine, meat, medicines, and in general without any

succour. The father abandoned the child, the son the father, the husband the wife, and the wife the husband." And he proceeds in the same strain of fearful detail, but it is needless to pursue this topic further, for enough has been quoted to show the state of things at Marseilles at this period; and yet it is not worse than the state of some districts in Ireland during the past year, according to many well authenticated accounts. And I suppose no one will attempt to deny that could this dreadful famine and pestilence have been foreseen, and proper means taken, the greater portion by far of the miserable and fatal visitation could have been effectually prevented.

I may now call your attention to some few facts, with reference to the causes of illness and the means which effectually do away with the sources of disease in many instances.

You have already observed that filling up the ditches of the fort of "Bourg en Bresse" effectually banished the intermittent fevers previously infesting that district, and that rendering insalubrious marshes dry *terra firma* made them no longer unhealthy.*

We perceive how the scurvy raged furiously on land and sea amongst the subjects of Great Britain and other nations; we know the cause, and we are well acquainted with the preventives; these last have been effectually applied, and the disease has been banished as a scourge.

We have adverted to the Plague of London during the 16th and 17th centuries, and we perceive its dreadful consequences, and we know that to the burning and the rebuilding of London on better principles, the subsequent immunities from this awful visitation are attributable. And can there be a doubt,—does any one man, for a single moment, question but that many of those terrible diseases, those various forms of fever, which we hear constantly of as haunting large towns and districts, sweeping off the wretched inhabitants wholesale, and leaving gaps amongst the living masses occupying the fatal spot, are as fearful and as certain as though the wide destruction were caused by the murderous efforts of a disciplined and numerous army having been directed on the inhabitants occupying the doomed district? For I

* On the subject of Marsh "Malaria," I am indebted to the admirable paper of "Dr. Brown" for several facts and extracts inserted in this pamphlet.—See "*Encyclopædia of Medicine*."

can assure my audience that I am not drawing largely, or imposing on their belief, when I assert that hundreds and hundreds of instances are on record, where disease has made in given districts quite as clean a sweep amongst the inhabitants as did that wholesale political massacre in the year 1691, on the occasion called the Raid of Glencoe, in Scotland. I mention this particular fact by way of illustration, because it is one as familiar as it is shocking to every person of the present day who has heard of or read the Histories of England and Scotland.

I have alluded to jail fevers—horrible to think of—shocking to humanity and Christianity to contemplate—penning up our fellow-men and brethren under such dreadful and almost bestial circumstances. Curious, and no less instructive, to perceive that the celebrated Bacon, Lord Verulam, one of the most enlightened men in the whole world of his day—one of the greatest law officers of his time, and the adviser of his Sovereign, should, in adverting to this fact, have found out the “wisdom” only of airing and ventilating the persons of these doomed and unhappy men and women previous to their being brought out of their wretched and pestiferous dens, to receive trial and judgment at the bar of British justice.

I need not observe that these horrible jail diseases do not occur from such sad neglect and ill-judged prison arrangements in the present day : and when I remarked that it was useful to reflect on and contemplate Lord Bacon’s views of the matter, it must be obvious to you that the apathy, prejudice, and bad arrangements of the period I have just alluded to, and which we now call the earlier and more rude times, actually exist at present in some particulars relating to public health, almost to an equal extent that they did in the sixteenth and seventeenth centuries ; and indeed, if such a serious matter can be looked upon at all in a ludicrous light, it is almost ridiculous to perceive how much, and how nearly, until a very recent period, the conduct and apparent views of the British public resembled those of the great man I have just spoken of ; for they have thought as little, and proposed as little up to a recent date, to remedy these matters, as he did.

Let us look at home to the character of many of the dwellings in almost all our large towns in the present day ; let us contemplate un-

ventilated rooms and workshops, the stench and abominations they contain, the green and filthy gutters, the unsavoury and pestiferous sewers, or perhaps the want of any at all; let us visit the damp, dark, and insalubrious cellars, dungeons, dreary dens, where ruddy health and calm contentment never have long made an abiding place; let us look at the dreary and unwholesome and ill-ventilated close court, the narrow dark alley, on which the sun of heaven never fairly shines, and the heaps of filth, offal, and shocking accumulations they contain; see age, manhood, youth, childhood, infancy, clothed in rags, misery in their hearts, famine in their faces, and poison in their blood, living, or rather slowly dying here, far away from comfort, the companions of misery; and too often with vice and dissipation for their playfellows and intimate associates.

Who can expect health—who contentment—who happiness—who uncontaminated and consistent principles here? These are not the children of hope; they are the foundlings of despair, and in some respects nearly as ill off as the dungeon outcast, driven from the pale of society, although they may never have committed a crime; but here they live, year after year, in the cold, damp, wet, and dark offensive and inhospitably cheerless abodes, pining away their lives, until kind nature, taking compassion on them, signs their release wholesale from the world of sorrow they inhabit: her ministers of mercy being deadly contagious fevers in various forms. This picture is not overdrawn; it is taken from the life, and if you will use the trouble, you may peruse and sadly muse over hundreds of instances of this kind not less truthful, yet equally dreadful. This was the state of the felons' dens and prisons in Lord Bacon's time; and this is actually the state of thousands upon thousands of the dwellings of the free inhabitants of happy England, Ireland, and Scotland in the present day, not of prisoners and felons, but of men, women, and children unstained by crime.

Who can wonder at contagious disease being rife with all the sorrows and catastrophes that inevitably follow in the train of such a state of things as this. Can any age of rude barbarism exceed it? Is there no skill, industry, or power, to be brought to bear to remedy this, which should be a matter for serious consideration to every man, from the humble householder to the minister of the crown.

No one can, perhaps, justly say that there has been any actual want of a general wish to remedy these evils on the part of the British public: very like the great man Lord Verulam, another great personage, I mean John Bull, has been pleased to see the wisdom of doing something. But John often prefers working by means of charity only. Go to John in the name of "charity," and he'll hear you readily and give willingly; talk to him in this strain and you'll find he immediately becomes a prince in heart and pocket—he'll open the one and empty the other to the fullest extent; but do not hint at taxation or innovation, or he'll resist it instantly, and set about it in any and every way he can think of, and he will find excuse after excuse, and shuffle after shuffle, to oppose and thwart those men and measures which threaten him with either hated change or novel impost, no matter how desirable or how requisite they may be.

Thus, although the Government has wisely essayed to effect some legislative enactment to meet the exigencies of the case, hitherto the subject has been so surrounded by difficulty, dissatisfaction, opposition, and want of unanimity, that no effectual measure has yet received the sanction of the legislature and become the law of the land.

It is greatly to be hoped that, as various periodicals and other means for spreading this subject make it more generally familiar to the public, correct knowledge, the proper result of inquiry and discussion, will be the consequence, and that this will be widely spread amongst all classes of the people;* so that they may with one consent unite in endeavouring to obtain that great desideratum which we have been discussing; namely, an amelioration of, if not entire immunity from, many diseases caused by Malarious emanations in towns.

Not only is such amelioration to be desired abstractedly on the score of enjoying better health and lessening mortal casualty, but it seems to me also of great importance to the philanthropist and Christian, for many other cogent reasons.

Education, amongst all classes, will be more satisfactorily carried

* "Gutta cavat lapidem non vi, sed sæpe cadendo."

out, for, independently of a sound body aiding much in forming a sound mind—the former not being so likely to be the result if the young are surrounded by squalor and filth—I think comfort and healthful circumstances offer considerable encouragement to the well-disposed, and tend to promote placidity, contentment, and proper reflection, and to render mankind more amenable to the dictates of correct principles, and more observant of the laws, divine and human, to which they owe allegiance.

Certainly, living in and partaking of scenes of woe, wretchedness, misery, and mortality, such as we have been contemplating, and particularly when arising out of causes so obviously remediable, must tend to degrade, vitiate, and lower the standard of mind and bodily health, and to predispose persons so unhappily situated to a course of irregular and careless living, and offer temptations to drown care in inebriety,—to treating the Sabbath with contempt,—to being indifferent to the value of education, or wholesome self-government or reputation. I think this necessarily must be the case, for what can be more depressing or disheartening than inevitable and squalid misery?—what more reckless or inconsiderate than hopeless despair?

I have ventured to appeal to you on this subject strongly, and at some length. Let me assure you charity cannot effectually combat the evils to which I have adverted. You may send clouds of whitewashers, loads of clean bedding, ample supplies of food, medical appliances and medical men, and clergymen and schoolmasters too; you may build hospital on hospital;—all this has been tried by a benevolent public, and God forbid such a source of succour should ever fail the needy, or cease to be administered by you. But I think you must perceive this benevolence, this munificence on your part, will not suffice to crush the evil. It is legislative enactment only, aided by efficient and good regulations, rigidly enforced by the arm of authority, and supported by law and justice, that can cure this evil; and when effected, the change will be as much felt by the inmates of towns as was similar good law and wholesome authority in the British Royal Navy in curing the scurvy when it raged; and it ought to be the object of every well-thinking person to aid and assist, as far as may be, in bringing about that which is not only of

importance and of benefit to the poor, wretched, and needy, but vitally important, also, to those well off in the world—to every one who values life, health, and comfort, and whose feelings of affection look homeward to his hearth, surrounded by his family circle,—his father, mother, brother, sister, his wife, his children, and himself—all are, more or less, beset with the dreadful influences I have spoken of, and many have bitterly felt their dire effects, and the bereavements they have occasioned. Let us all, then, seriously reflect on these subjects, and do what we can to effectually strengthen the Government, in doing away with the sources of Civic Malaria, and thus, as far as we may, assist in promoting the “HEALTH OF TOWNS.” *

* Amongst the most prominent sources of ill-health in towns may be mentioned the want of a plentiful supply of good water. It has truly been said by Hoffman, “if there is any universal medicine in nature, it is water.”

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